TWO FURTHER CASES OF CARDIAC ANEURYSM

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PLATE X

The two following cases of cardiac aneurysm recently examined at Accra in the Gold Coast, West Africa, the one of the left auricle and the other of the anterior cusp of the mitral valve, are briefly recorded on account of their comparative rarity, and because they form a somewhat interesting series with the cases previously described by us (1920).

CASE I. A European man, aged about thirty-two years, who died suddenly on the beach at Accra when waiting to be conveyed on board the homeward-bound mail steamer. During the latter part of the war, the deceased served in the Flying Corps and lost his right arm as the result of an accident, the arm having been injured by coming in contact with a moving propeller. Previous to this he had been employed by a firm of contractors in the Gold Coast, and at the end of the war he returned to this Colony as a foreman in the Public Works Department. At the time of his death he had just concluded a year's tour of service spent at Accra, or in the neighbourhood of that town.

We are indebted to Dr. C. V. LeFanu for the following clinical notes of the case. Five months before his death the patient had a slight attack of malaria, but with this exception had not reported 'sick' during his tour. A week before he should have sailed for England he was examined for his Final Medical Certificate. Upon auscultation of his heart a peculiar bruit was noted, which Dr. LeFanu described as being of a quality such as he

had not previously heard. This bruit was most distinct in the pulmonary area, in the neighbourhood of a small scar which was present in the second intercostal space close to the edge of the sternum. There was no history or evidence of syphilis. The patient had been medically examined upon several occasions during the last year or two, and had not been informed after any of these examinations that there was anything the matter with his heart. During the war he was passed as fit for the Flying Corps, and a year before his death the Medical Adviser to the Colonial Office had passed him as fit to take up the duties of a foreman in the Public Works Department, work which is well known to entail heavy manual labour. It is, therefore, unlikely that this heart condition was of old standing, but it may be mentioned that the patient himself stated that he had always thought that his heart was affected, although he could give no history of symptoms in support of this idea. He was informed by Dr. LeFanu that his physical condition did not justify his return to West Africa, and was cautioned with regard to the risk he would run in attempting any strenuous muscular effort. Nevertheless, a few days later, as has already been stated, he fell dead on the beach when waiting to embark on the homeward-bound steamer.

At the autopsy it was found that the right arm had been amputated slightly above the middle of the shaft of the humerus, and a small scar about the size of a shilling was observed on the skin in the second left intercostal space half an inch from the sternal margin. In view of the pathological condition subsequently found, it may be stated at once that this scar was superficial, and that a careful examination failed to reveal any deep-seated injuries connected with it. Upon opening the thorax the pericardial sac was seen to be greatly distended, measuring vertically about eight inches and horizontally six and a half inches, and displaced the lungs on either side. It contained fluid blood under considerable pressure, so that on first opening it a jet of blood was projected for a distance of about a yard. About one pint of blood issued from the pericardium, and several recent clots were removed when the sac was fully opened. With the exception of the condition of the heart to be described immediately, the organs of the body appeared to be healthy.

The *heart* was not enlarged, but showed a considerable deposit of epicardial fat. Upon inverting the perciardium a discoloured, purple patch was found situated over the left auricular appendix. This patch was about as large as a broad-bean, and some tags of fibrin were adhering to it. On opening the heart the left auricular appendix was found to be dilated, its endocardium discoloured in a similar manner to the patch on the outer surface already mentioned, and its wall thin, smooth (owing to the disappearance of the pectinate arrangement of the muscles) and very friable. On examining the auricular appendix, the finger penetrated the wall and appeared in the discoloured patch on the outer surface, so that it was clear that it was through a rupture in this situation that the blood had escaped into the pericardium. With the exception of a few tiny, pearl-like vegetations at the margins of the mitral cusps on their auricular surfaces, no other abnormalities were observed in the heart or the great vessels at its base. The muscle of the walls of the ventricles appeared to be healthy, but it is to be regretted that circumstances did not permit of a detailed microscopical examination being made.

The condition of the left auricle in this case, the thinning of the wall, its friability, and the loss of its muscular rugosity, indicate that the dilatation was actually an aneurysm, and that this had finally ruptured, causing the death of the patient. According to Hall (1903), aneurysms of the chambers of the heart other than the left ventricle are 'no more than pathological curiosities, and are of the very rarest occurrence.' With regard to the left auricle, he states that Younge and Dreschfeld have each published a case of aneurysm of this cavity, and that in Younge's case, a man aged twenty-eight years, the cardiac valves were healthy, and in Dreschfeld's, a woman aged fifty-eight years, there was great stenosis of the mitral orifice. The case we have described resembled the former case more closely than the latter, for with the exception of a few small vegetations on the mitral cusps the cardiac valves were healthy. Rupture of the left auricle, indeed, appears to be a very uncommon occurrence; Odriozola (quoted by Hektoen and Riesman) recording it only in two cases in a series of one hundred and thirty-two cases of rupture of the heart. Unfortunately we are unable to make any suggestions as to the cause of the condition in our case, but so far

as the evidence went there was no reason to suppose that syphilis had anything to do with it. The detection of a remarkable bruit by Dr. LeFanu a few days before the death of the patient is of interest, since such observations are seldom made.

CASE II. A European man, aged thirty-six years, who died at Accra in February, 1922, of heart failure after an illness which had lasted about a month. His blood serum, tested on the eighth day of his illness, agglutinated *B. typhosus* in dilutions up to 1 : 125, and was negative to *B. para-typhosus* A and B; it also gave a weak positive Wassermann test and a positive Sachs-Georgi test. We are indebted to Dr. C. V. LeFanu for the following clinical account of the case.

In 1914 the patient was accepted for active service in a line regiment, served both in Gallipoli and France, and remained with the colours for five years. In 1916 he had some eye trouble, the nature of which is not known. In December, 1920, he joined the Gold Coast Service, and arrived in the Colony in the following January, so that at the time of the commencement of his last illness he had just completed a tour of twelve months and was expecting orders to return to England on leave. During his tour of service his name had appeared on the sick-list only once, namely, from the 16th of May to the 5th of June, on account of an attack of subtertian malaria. It is of interest to note that on this occasion no cardiac bruit was noted. The patient claimed to have lived a perfectly normal existence, and no history of syphilis or rheumatism was elicited.

On the 10th of January, 1922, the patient complained of fever and malaise. Two days later he was admitted to hospital. His symptoms were as follows:—Temperature 101° F. Tongue clean. Pupils strongly contracted ('pin-point') and reacting only very slightly to light. Very marked clubbing of all the finger-tips. Pulse 116, of Corrigan type; strong pulsations visible in the neck. The chest literally rocked with the cardiac action; the apex impulse was in the sixth interspace three-quarters of an inch inside the left nipple line. A rough double bruit was audible over the aortic and mitral valves, and a loud double bruit was also audible posteriorly to the left of the vertebrae, extending approximately from the seventh or eighth spinous process downwards. The radial arteries

were atheromatous. The liver was slightly enlarged downwards. The spleen extended well below the costal margin. The urine contained a trace of albumen. The action of the bowels was normal. No malaria parasites were found in the blood.

On the 18th of January a few scattered petechial spots were observed on the shoulders, chest and abdomen. Ten days later a slight, dry cough developed, followed two days later by signs of consolidation in both lungs, and subsequently by signs of pleural effusion on the right side. On the 10th of February the patient died suddenly in his sleep. The irregular fever and the oscillations of the pulse rate during the illness are shown in the chart. It may be remarked that it is somewhat strange that the gross cardiac lesions, which must have existed for years, had not previously been detected, although the patient must have been medically examined repeatedly in the Army and before coming to West Africa. With reference to the eye condition, the severity of the illness unfortunately prevented a more careful enquiry being made into the cause of the pupillary contraction which had been known to exist since 1916, and which continued unchanged throughout the illness.

At the autopsy both lungs showed broncho-pneumonic consolidation, especially of the upper lobes. The right pleural cavity contained about 30 ounces of a clear straw-coloured effusion. The liver was depressed, and was also considerably enlarged and in a state of chronic venous congestion. The spleen was enlarged and congested. In addition to the condition of the heart, presently to be described, the pericardium contained a small excess of fluid, but there were no adhesions.

The *heart* (Plate X, and text-fig.) was hypertrophied, weight about 17 ounces. The right side was slightly dilated, but otherwise presented no gross abnormalities. The wall of the left ventricle was hypertrophied, but appeared to be healthy. The aortic valves bore firm vegetations, apparently of some considerable age; the first part of the aorta was the seat of extensive atheromatous disease, and the orifices of the coronary arteries were patulous. The principal lesion was found, however, in the anterior cusp of the mitral valve. From the middle of this cusp, projecting towards the auricle, was a large aneurysmal sac which had ruptured, leaving a wide, irregular opening. The diameter of this aneurysmal sac was about 12 mm.,

and it was produced on the side directed towards the apex of the cusp into a rounded process measuring about 10 mm. in length and 9 mm. in thickness. Round the ragged margin of the ruptured portion of the aneurysm were a few small vegetations, and in the marginal portions of the cusp not involved in the aneurysmal dilatations were numerous small, white, thickened areas. Sections of the wall of the left ventricle appeared to be almost normal; there

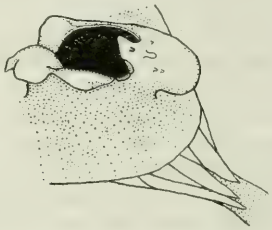
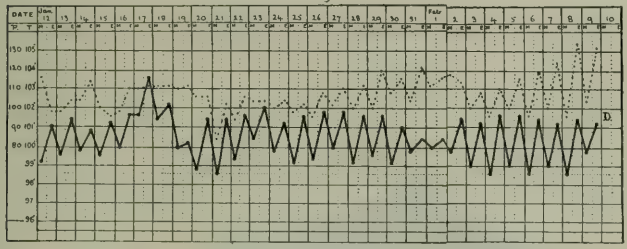


Fig. Case II. Sketch showing the ruptured aneurysmal sac in sub-lateral view.

was, however, a slight increase of the interstitial fibrous tissue. The coronary arteries showed a high degree of endarteritis. In the accompanying photograph (Plate X), the appearance of the aneurysm and the atheromatous condition of the aorta are fairly clearly seen, and in the figure, which is a rough sketch of the anterior cusp of the mitral valve as seen in a sub-lateral view, some of the characters of the lesion are more clearly indicated.

The site of the aneurysm in this case, the anterior cusp of the mitral valve, is that which, according to Drasch, is the more usual. The history of the case, the very pronounced clubbing of the finger-tips, etc., suggests that the cardiac lesion was of old standing, but caused the patient himself no inconvenience or discomfort, and gave rise to signs so slight that they escaped detection at medical examinations such as that required in the case of officers proceeding to West Africa. The aneurysm of the mitral cusp, although of considerable size, was, in fact, in such a situation that it would not necessarily interfere with the efficient closing of the valve. The rupture of the aneurysm at its apex was, it may be supposed, the immediate cause of the sudden development of cardiac symptoms,

and the supervention of pneumonic infection the determinate cause of death. The irregular fever, shown in the chart, before the onset of the pulmonary complications is suggestive of endocarditis, but we did not succeed after death in cultivating any pathogenic organism



Case II. Chart of temperature (continuous line) and pulse (dotted line).

from the margin of the aneurysm. The results of the Wassermann and Sachs-Georgi tests, and the diseased state of the aorta, point to the probability that in this case the aneurysm had developed as the result of atheromatous processes.

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EXPLANATION OF PLATE X

Aneurysm of the anterior cusp of the mitral valve of the heart.